

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on October 19, 2004, and the references cited therewith.

Claims 5 and 6 are amended, no claims are canceled, and Claims 7-16 are added; as a result, Claims 1-16 are now pending in this application.

§102 Rejection of the Claims

Claims 1 and 3 were rejected under 35 USC §102(b) as being anticipated by U.S. Patent No. 3,334,880 issued to Nishida et al. ("Nishida"). Applicants respectfully traverse this rejection.

Nishida teaches benefits from changing a hemispherical stove top to a spherical stove top and has very little, if anything, to do with the present invention. The Examiner alleges that structure 16 and lining material 14 of Nishida are equivalent to the first substantially cylindrical structure of Claims 1 and 3. However, it is made expressly clear in Nishida that the stove top 16 is spherical. *See* Title; col. 1, lines 10-13; col. 2, lines 63-65 and lines 69-70; col. 3, lines 6-7 and lines 26-27. In fact, it is a significant aspect of Nishida that the stove top is changed from the hemispherical stove tops found in the prior art to Nishida's spherical stove top.

Spherical is not cylindrical. The first substantially cylindrical structure of Claims 1 and 3 allow spiraling fluid to flow along the axis of the cylindrical structure from an inlet to and outlet. A spherical structure has no axis. It is not at all clear how a fluid would flow through Nishida's stove top.

The Examiner alleges that Nishida teaches the creating steps of Claims 1 and 3. However, the creating step requires that a cavity be created in the first structure that has a diameter equal to or larger than the outside diameter of the second structure. Nishida does not teach or suggest this. As can be seen in Figure 2 of Nishida and as explained in Nishida at column 3, lines 23-25, the diameter of the cavity in the stove top is not equal to or larger than the outside diameter of the stove wall. The diameter of the spherical stove top may be larger than the outside diameter of the stove wall, but the diameter of the cavity is not equal to or larger than the outside diameter of the stove wall. Instead, the stove wall is grooved at the end such that the

diameter of the cavity in the stove top is equal to or larger than the outside diameter of the grooved end part 26.

The Examiner alleges that Nishida teaches the shaping steps of Claims 1 and 3. However, the shaping step requires the first end of the second structure to be substantially identical in shape to the shape of the created cavity. Nishida does not teach or suggest this. As is shown in Figures 10 and 11 of the present specification and explained at page 11, line 3 to page 12, line 12, the shaping of the first end of the second (and third) structure according to the present invention allows the end of the second structure to line up with the edge of the cavity in the first structure. In Nishida, on the other hand, the only shaping that is taught or suggested is the grooving of the stove wall end.

Nishida does not teach or suggest one or more of the limitations of the present claims. Accordingly, the present invention is not anticipated by Nishida nor does Nishida make the present invention obvious.

Claim 1 was rejected under 35 USC §102(b) as being anticipated by U.S. Patent 3,820,826 issued to Ligon et al. ("Ligon"). Applicants respectfully traverse this rejection.

The Examiner equates structure 2 in Ligon with the first structure of liner material required by Claim 1. However, structure 2 in Ligon is not liner material at all, but instead is a section of the pipe itself. Also, the liner material 12 is not a single structure with a cavity created in it. Instead, Ligon teaches two separate liner pieces 12 with shaped ends that form a circular cavity when the two pieces abut each. The Examiner also equates liner material 28 with the second structure of liner material required by Claim 1. However, the structure 28 in Ligon is not liner material at all. It is a pipe section. There is no liner material corresponding to pipe section 28. Nor is pipe section 28 inserted into the cavity formed by the two abutted liner sections 12. Accordingly, Ligon does not teach or suggest a second substantially cylindrical structure of liner material at all. Instead, Ligon teaches moving liner members 12 "into the shell 2 from the opposite end portions 4 and 5 thereof until the edges 36 and 37 defining the respective portions of the aperture 30 are in engagement with the inner end port 32 of the branch portion 25." That is, the liner members are moved in contact with pipe section 25. There is no liner structure that is inserted into the cavity formed by liner members 12. Thus, there is no inserting step.

Ligon does not teach or suggest one or more limitations required by the present invention. Accordingly, the present invention is not anticipated by Ligon nor does Ligon make the present invention obvious.

§103 Rejection of the Claims

Claims 2 and 4-6 were rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 3,334,880 issued to Nishida et al. ("Nishida") in view of U.S. Patent No. 2,903,876 issued to Nannini ("Nannini"). Applicants respectfully traverse this rejection.

Applicants hereby reiterate the differences drawn above between the present invention and Nishida. Nannini adds nothing to Nishida. Nannini teaches a lined furnace or reactor with tangential gas inlets 28 in conjunction with an axial gas inlet 26 and an axial effluent line 30. The inlets and effluent line do not appear to be lined. Thus, Nannini does not teach or suggest a second cylindrical structure, a creating step, a shaping step, or an inserting step. The Examiner appears to be equating the tangential gas inlets of Nannini with the stove body and connecting hot-air pipe or combustion pipe of Nishida. The Examiner's argument appears to be that because gas inlets on a furnace can be tangential (as well as axial) to the furnace body it is obvious that a stove body and connecting pipe can be tangential to a stove top. Applicants contend that modifying Nishida in this manner does not teach or suggest a method of making a liner joint as claimed, but instead teaches a stove with a stove top that is off center (i.e., tangential) from its stove body. Applicants contend that such a modification is not obvious to one of ordinary skill in the art attempting to solve the problem of changing the fluid flow direction of a highly abrasive fluid. Even if one were to combine Nannini with Nishida and make Nishida's stove body and connecting pipe tangential, there is no teaching of the creating step or the shaping step that would allow "the edges of the inlet (or outlet) liner" to be aligned "with the internal surface of the body liner." Present specification at page 11, lines 18-19.

Nishida in view of Nannini does not teach or suggest one or more limitations of the present invention. Accordingly, the present invention is patentable over Nishida in view of Nannini.

Claims 2-6 were rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 3,820,826 issued to Ligon ("Ligon"). Applicants respectfully traverse this rejection.

Applicants hereby reiterate the differences between Ligon and Claim 1 of the present invention drawn above. Ligon does not teach or suggest one or more limitations of Claim 1. Thus, Ligon does not teach or suggest one or more limitations of Claims 2-6. Accordingly, the present invention is patentable over Ligon.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (989-774-2900) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 50-3019.

Respectfully submitted,

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By their Representatives,

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Date November 23, 2004

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 23 day of November, 2004.

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